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Abstracts

[*Sources of patent abstracts are cited if they are not from printed copies or official abridgments.*]

ORGANIC FIBERS I

FIBER CROSS LINKAGES: natural and synthetic. A. H. Preston, *Fibres 7,* 119-22 (May, 1946).

Noting that a certain general structural resemblance exists among all fibers, a survey relates natural cross linkages of the animal and vegetable fibers to the new synthetic linkages. As a result of research, improvement of the natural linkages is feasible and entirely new synthetic linkages are foreseen.

TTD:7-46.

MODERN TEXTILE FIBERS. Chemical and physical properties of modern textile fibers. John K. Berry. *J. Roy. Soc. Arts 94,* 403-17 (May 24, 1946).

A lecture in which are reviewed some of the more important properties of the man-made fibers. The fibers considered, all organic polymers except the one mineral fiber, glass, are only those in fairly large commercial production: viscose, cellulose acetate, cuprammonium, casein, nylon, Vinyon, glass, and alginate. The heat resistant properties of these fibers are contrasted, that of glass being greatly superior. Stress-strain comparisons are shown in tables and graphs. Some general properties such as luster and handle and some of their dyeing properties are discussed, it being noted that all man-made fibers may be dyed by normal methods except in the case of glass and Vinyon, which have no dyeing properties although they can be colored by special techniques. New fibers, it is predicted, will continue to appear, with existing fibers being further varied and modified. TTD:7-46.

MODERN TEXTILE FIBERS. Manufacture of modern textile fibers. Claude Diamond. *J. Roy. Soc. Arts 94,* 382-403 (May 24, 1946).

A lecture in which the organic artificial and synthetic fibers and the inorganic glass fibers are surveyed. The world consumption of fibers, including both the natural (cotton, wool and silk particularly) and the man-made, is tabularly compared. The production of continuous filament for the past 25 yrs. is graphically illustrated by countries. Among the fibers considered, being first tabulated according to source, spinning composition, chemical constitution and type of production, are viscose, cuprammonium, Fortisan, cellulose acetate, alginate, protein, nylon, Perlon L, vinyl polymers (such as Vinyon), and glass fibers. The various spinning processes employed for these different fibers are discussed: melt, dry, and wet spinning. Particular consideration is given to the fiber structure by reference to that of natural fibers, aided by diagrams of molecular chains, the universality of which is emphasized. It is predicted that the cellulosic fibers, because of low cost, will continue for the next 20 years as the general purpose fibers while the synthetic linear polymers will be employed in the more specialized textile trades.

TTD:7-46.

MODERN TEXTILE FIBERS. Application of modern textile fibers. Robt. S. Greenwood. *J. Roy. Soc. Arts 94,* 418-26 (May 24, 1946).

A lecture discusses some aspects of fiber applications, including a wide variety of men's and women's wear, domestic goods, and industrial products.

TTD:7-46.

SOME BRAZILIAN FIBERS. Anon., *Fibres 7,* 132 (May, 1946).

A brief note on some lesser known fibers of Brazil includes: St. Francis poppy, tucum, macaiba, piassaba, caroa, etc. TTD:7-46.

Vegetable fibers I 1

COTTON prepares for competition. Chas. K. Everett, Cotton Textile Inst., Inc. *Textile Colorist 68,* No. 5, 18-19 (May, 1946).

Cotton manufacturers are realistically facing the competition offered by other fibers. TTD:7-46.

MODERN JUTE SPINNING. Flaxman. *Textile Recorder 63,* No. 757, 46-7 (Apr. 1946).

Two important considerations that recommend jute over other members of the long vegetable fiber group (flax, hemp, ramie, sisal, etc.) i. e. price advantage and adaptability, are discussed. The main source of jute supply is the province of Bengal, India. Its chemical composition, as determined by Schwalbe, is given; and various processes of fiber purification, based on British patents, are discussed. TTD:7-46.

COTTON. FACTS ABOUT COTTON AND SOUTHERN FARMING, BACKGROUND INFORMATION FOR FARM LEADERS. Miscellaneous Publication 594; USDA; 1946; 64 pp.; price 15¢. TTD:7-46.

COTTON VARIETIES IN THE HILL SECTION OF MISSISSIPPI. J. Fred O'Kelly. Bull. 426, Agricultural Expt. Station, State College, Miss.; 1945; 7 pp. TTD:7-46.

IMPROVED MACHINES MAKE FIBER FLAX PRODUCTION MORE ECONOMICAL. Folder of USDA Agricultural Research Administration; 1946; 2 pp. TTD:7-46.

OKLAHOMA COTTON VARIETY TESTS FOR 1944 AND 1945. Henry E. Dunlavy, I. M. Parrott, Ferd W. Self and Merrill Gober. Circular M-157, Agricultural Expt. Station, Stillwater, Okla.; 1946; 14 pp. TTD:7-46.

SEED COTTON DRYING PROCESS AND EQUIPMENT IMPROVED. Folder of USDA Agricultural Research Administration; 1946; 2 pp. TTD:7-46.

Animal fibers — I 2

ANIMAL FIBERS. Rôle of the inner root sheath in the development of animal hair. J. L. Stoves, *Fibres 7,* 126-7 (May, 1946).

A rejoinder to criticism (see p. 264: TTD-June, 1946) of a previous article (see p. 156: TTD-Apr. 1946) somewhat amplifies the original remarks; and it is stated that the criticism complements rather than contradicts the original statement. TTD:7-46.

SILK—Continuous fibers made from formerly wasted silk cocoons. *Warp Sizing Specialist* (July-Aug. 1946). Reprinted from *Cutting Topics,* Taylor-Stiles & Co., Riegelsville, N. J.

Formerly discarded cores of silk cocoons are now used by machine cutting, to remove the dead worms, dissolving and spinning as for rayon.
LCL TTD:7-46.

WOOL AND ITS UPKEEP. Lillian Lund. Circular 63, Agricultural Expt. Station, Brookings, S. D.; 1946; 4 pp. TTD:7-46.

Artificial fibers — I 3

DISAPPEARING FIBERS. Nils Gralen, Swedish Textile Research Inst. *Textil och Konfektion 3,* 176-7 (May, 1946).

Illustrated description of special yarn and fabric effects obtainable with the aid of alginate fibers which are leached out of the fabric after weaving. Some ornamental effects and a variety of imitation fur are illustrated. TTD:7-46.

ALGINIC ACID DERIVATIVES. G. E. Cunningham, N. H. Chamberlain & J. B. Speakman (to Cefoil, Ltd.). Brit. P. 573 591. *Textile Mfr. 72,* 220 (Apr. 1946).

Alginic acid derivatives are swollen in an aqueous medium; the water is displaced, and an organic liquid added. TTD:7-46.

Cellulosic rayons — I 3 a

ALGINATE RAYON. Some uses of calcium alginate rayon. A. Johnson & J. B. Speakman, *J. Soc. Dyers Colourists 62,* 97-100 (Apr. 1946).

Insolubility in dilute alkali solutions, once considered a defect and overcome by development of alkali-resistant alginate rayons, has been turned to advantage in the making of twistless yarn fabrics, crepes, astrakhans, pile fabrics, etc., where the alginate component can be removed by normal scouring. Its varied uses are described and illustrated with 4 pages of photographs: as binder, as supporting thread, as carrier, as spacing agent, for ornamentation, and as bonding agent. TTD:7-46.

FUTURE OF SPUN RAYON. Margot Duff. *Fibres, Fabrics & Cordage 13,* 190-1, (May, 1946).

Future trends in spun rayon are considered from the point of view of consumer demand. TTD:7-46.

RAYON. 100% success in rayon. A. Glover, Courtaulds, Ltd. *Textile Weekly 37,* 628, 630, 632, 634, 684, 686, 688 (Mar. 29, Apr. 5, 1946).

Practical suggestions are given for weaving rayon fabrics, some of which include: covering race boards with swansdown (to prevent shuttle markings), using rubber (instead of emery or tin) takeup rollers, maintaining a moderate loom speed, and open shed dobbies (instead of center shed dobbies), for weaving warps. The importance of selvedges, preferably 2-ply, for rayon fabrics is emphasized. Temple plucking is a problem in weaving rayon, particularly Fibro, which can be overcome by putting a special rubber over the temple rollers. TTD:7-46.

RAYON. Technical developments in British rayons: Tenasco, Durafil and Fortisan. Nils Gralen, Swedish Textile Research Inst. *Textil och Konfektion 3,* 124-5 (Apr. 1946).

The properties and uses of Tenasco, Durafil and Fortisan are discussed. Durafil, which is spun by the Lilienfeld method, suffers relatively more loss of elasticity for its strength increase than does Tenasco. It is partly for this reason that Tenasco is more of a general purpose fiber, whereas Durafil is more restricted to bearings, belting and other uses demanding high strength but not requiring much elasticity. TTD:7-46.

SPINNING BUCKET. Hugh D. Haley (to Am. Viscose Corp.). USP 2 401 069, May 28, 1946.

A spinning bucket for use in twisting artificial fibers (particularly rayon) and coiling in cake form is composed of a molded artificial resin (phenol-formaldehyde) with a rim of resin-impregnated laminated fabric. Such a bucket, particularly the rim, resists the stresses and strains from high centrifugal force and may be produced at considerably less cost than a fully laminated bucket. TTD:7-46.

RAYON SPINNING. Am. Viscose Corp. Brit. P. 573 403. *Textile Mfr. 72,* 219 (Apr. 1946).

In the spinning of rayon, filaments are protected from turbulence and currents in the coagulating bath by means of a protective device mounted on a stationary jet union which in turn holds the spinneret. TTD:7-46.

RAYON. M. Landa (to Bata A-G). Swed. P. Appl. 5400/43, July 1, 1943. *Svensk Papperstidning 49,* 262 (June 15, 1946).

A method for delustering dry-spun viscose rayon. TTD:7-46.

RAYON PULP. K. af Schulten (to A-B Cellinventor O-Y). Swed. P. Appl. 61/45, Jan. 4, 1945. *Svensk Papperstidning 49,* 262 (June 15, 1946).

A method for producing cellulose with a high alpha-cellulose content. TTD:7-46.

RAYON. K. A. Lenning, Swed. P. 116 133, Jan. 21, 1943.

Rayon or rayon staple fiber with periodic variations in fiber diameter may be produced by vibrating the spinneret orifice, using tubes which are vibrated with a fundamental tone and one or more overtones. The phase and amplitude of overtones are adjustable with respect to the fundamental tones. TTD:7-46.

CELLULOSE ETHER RAYON. L. Paulus (to "Texis" S. A. Textile). Swed. P. 116 134-5, Mar. 29, 1943.

Fibers or foils are made from alkali solutions of cellulose ethers by coagulating, drying and then treating the fibers with a solvent for the alkaline or with a reagent for converting it to carbonate, while regenerating the cellulose ether in an insoluble form. A modification of the method is applicable to viscose filaments or foils. TTD:7-46.

WOOL TYPE RAYON. G. Heberlein (to Heberlein & Co.). Swed. P. 116 219, Mar. 18, 1941.

Rayon is given wool-like properties by winding under tension, wetting at elevated temperatures, drying, moistening again but not under tension, and fixing the wool-like properties by treatment with formaldehyde in presence of an acid catalyst at temperatures between 90 and 160° C. TTD:7-46.

VISCOSE FOIL. "Texis" S. A. Textile. Swed. P. 116 355, Feb. 28, 1942. *Svensk Papperstidning 49,* 263 (June 15, 1946).

Artificial ribbons or foils are made from viscose solutions by using 2 successive coagulating baths, one of which contains Na_2CO_3. The second bath contains inert substances, but serves to retain the moisture content of the coagulum until regeneration of the cellulose is completed. TTD:7-46.

Protein fibers — I 3 b

PEANUT PROTEIN. R. H. K. Thompson & S. R. Swift (to I. C. I., Ltd.). Brit. P. 573 375. *Textile Mfr. 72,* 219 (Apr. 1946).

Spun filaments are produced from peanut globulins in caustic alkali solution of not less than 0.8% (calculated as NaOH), the solution being kept at an elevated temperature until maximum viscosity is reached. The solution loses its spinnability before putrefaction begins. TTD:7-46.

CASEIN FIBERS. R. Signer. Brit. P. 573 432. *Textile Mfr. 72,* 219 (Apr. 1946).

Casein threads from a spinning solution are hardened by treatment with formaldehyde vapors. TTD:7-46.

PROTEIN FIBERS. R. Signer. Swed. P. Appl. 8114/42, Dec. 29, 1942, and 4835/44, June 12, 1944.

A method for producing artificial fibers from proteins; and a process for increasing the tensile strength of artificial protein fibers. TTD:7-46.

Synthetic fibers — I 4

NYLON stocking symposium. Anon. *Textile Mfr. 72,* 207-8 (Apr. 1946).

Nylon and its use in hosiery yarns are considered. Full-fashioned and seamless hosiery are compared, with brief mention of preboarding, scouring, and dyeing. TTD:7-46.

NYLON. Moistening methods for nylon. W. B. Griffin, Kali Mfg. Co. *Cotton 110,* No. 4, 148, 150, 153 (Apr. 1946).

Five of the most common moistening methods in preparing nylon yarn for knitting are described and diagrammed, with advantages and disadvantages of each method listed. TTD:7-46.

NYLON IN SWEDEN. Prospect for manufacture of Swedish nylon hose. Ake Wiberg. *Textil och Konfektion 3,* 64-6 (Mar. 1946).

The necessary machinery and know-how are available in Sweden for the manufacture of stockings and only the yarn is lacking. A small experimental lot has been used to demonstrate the possibility of stocking manufacture from nylon in Sweden. TTD:7-46.

SYNTHETIC FIBERS: their significance and war time development. Per-Olof Kinell, Physical-Chemical Inst., Upsala. *Textil och Konfektion 3,* 129-35 (Apr. 1946).

Some war time developments in nylon, modified nylons, nylon blended with phenolic or other synthetic resins, vinyl and vinylidene resin fibers, Polythene and Polyacrylonitrile fibers are described and illustrated. Military uses of synthetic fibers offered many leads toward peace time uses. TTD:7-46.

NYLON. Wm. W. Watkins (to Canadian Industries, Ltd.). Can. P. 434 862, May 21, 1946.

A synthetic linear polyamide (nylon) consists of a solution of polyhexamethylene adipamide in 2-nitro-l-butanol in a proportion of 1-9 parts by wt. TTD:7-46.

VINYL RESIN FIBERS. Alden W. Hanson (to Dow Chemical Co.). Can. P. 434 984, May 28, 1946.

Supercooled filaments of a vinylidene chloride-vinyl

chloride copolymer (Saran) are simultaneously stretched and false-twisted to make crinkly filaments.
TTD:7-46.

Fiber applications **I 5**

LAMINATED FIBER BOARD. Harris O. Ware (to Hercules Powder Co.). USP 2 401 675, June 4, 1946.

A laminated fiber sheet material, which may be of paper, asbestos sheet, fiber board, etc., for use as insulation, paneling, etc., has a number of fibrous sheets adhesively bound by milk casein in an aqueous alkaline solution to which is added an ammonium compound of Zn, Cd, or Mg. TTD:7-46.

FELT. Carleton S. Francis, Jr. (to Sylvania Industrial Corp.). Can. P. 434 772-4, May 14, 1946.

A fibrous mat composed of felted thermoplastic cellulose derivative fibers bonded together may be shaped into hollow molds (as in a hat). TTD:7-46.

INORGANIC FIBERS II

BLENDED ASBESTOS YARN. Jos. A. Truitt (to Am. Viscose Corp.). USP 2 401 389, June 4, 1946.

An improved fire- and heat-resistant blended yarn, useful for insulating purposes, consists of asbestos fibers and 10-25% of cellulosic fibers (viscose rayon staple), preferably of about 1½ denier. TTD:7-46.

CRIMPED GLASS FIBER. Games Slayter (to Fiberglas Canada, Ltd.). Can. P. 434 589 (Can. P. 434 590 through Owens-Corning Fiberglas Corp.), May 7, 1946.

A closely felted mat (as for insulation) is composed of a tangled mass of crimped glass fibers which have been drawn out from a melt through a pair of intermeshing gear-shaped rotors. TTD:7-46.

GLASS FIBER STRANDS. Piero Modigliani (to Fiberglas Canada, Ltd. through Owens-Corning Fiberglas Corp.). Can. P. 434 591, May 7, 1946.

A mass of glass fibers on a spinning drum is cut into strips by a number of angularly arranged knives, the cut strips being then stretched into strand form by means of a pneumatically operated injector nozzle, and finally wound and stored. TTD:7-46.

FIBER TO YARN III

CARDING AND SPINNING. Georgia mill men discuss carding and spinning. Anon. *Cotton 110,* No. 4, 72, 74, 76, 78, 138; *Textile World 96,* No. 4, 151, 153, 219-20 (Apr. 1946).

A round table discussion. Topics include compressing card sliver, metallic card clothing, air-conditioning card room, tension regulators for reclothing cards, impregnated type bearings, synthetic cots and aprons, etc. TTD:7-46.

Fiber preparation **III 1**

CARD FLY SEPARATOR developed by mill man. C. Mallard Bowden. *Textile World 96,* No. 4, 135, 137 (Apr. 1946).

A spinnable fiber for low strength yarn can be recovered from licker-in motes by separating them from licker-in fly waste by use of a fly separator (patented by Glenn R. Hooper, Frieda Mfg. Co.), which is described and illustrated. TTD:7-46.

CARDING POWER and its relation to woolen carding. G. W. Pickersgill. *Textile J. Australia 21,* 102-3 (Apr. 1946).

Carding power, assessing the efficiency of a card, is based on at least 7 different factors, including (1) inclination of the card wires, (2) number and size of the rollers, (3) number of card wires per square inch. These and other factors are briefly discussed.
TTD:7-46.

CARDING RAYON-WOOL BLENDS. Bill McComb. *Rayon Textile Monthly 27,* 247-8 (May, 1946).

Pilot plant operation for rayon-wool blends is discussed. The roller card is considered the only one suitable. A static neutralizer (e. g. the Chapman) is needed. The cylinder and doffer require close attention. Suggestions for stripping and grinding wire are given.
TTD:7-46.

CARDING WOOL. Neppiness in woolen carding. P. P. Townend, Leeds Univ. *Textile Recorder 63,* No. 757, 42-5 (Apr. 1946).

Neppiness causes reduced spinning quality (since the sliver will not draft so easily) and an irregular yarn. Experiments indicate that residual wool grease left by inefficient scouring gives a more neppy sliver. Carding noils by one or more of 4 different suggested methods is discussed. TTD:7-46.

COTTON CARD ROOMS. Production problems in cotton card rooms. F. M. Dyke. *Textile Mfr. 72,* 196 (Apr. 1946).

Methods of overcoming card sliver variation (e. g. clothing the cylinder, doffer, and flats with garnet-tooth wire) are briefly reviewed. TTD:7-46.

DECORTICATING SISAL. C. L. Walsh (to African Sisal & Produce Co., Ltd.). Brit. P. 573 673. *Textile Mfr. 72,* 221 (Apr. 1946).

In a dry decorticating process a continuous layer of sisal leaves is fed between rollers with intermeshing points, that pierce the skin of the leaves without breaking the fibers, and deliver the leaves in the form of a matted sliver. TTD:7-46.

HACKLING: the vertical machine. Technologist. *Fibres 7,* 123-5 (May, 1946).

Hackling, or parallelizing of flax and hemp fibers, along with splitting of strands and separation of tow,

by means of a vertical machine, is described and illustrated (by a photograph and a line diagram).
TTD:7-46.

LAP DRAWING. New technical developments in lap drawing. Arne Jacobsson, Hargs Fabrikers AB. *Textil och Konfektion 3,* 74-5 (Mar. 1946).

Illustrated description of the Platt sliver lap former which forms a continuous lap from 16 rovings, and a lap draw frame which accommodates 8 laps.
TTD:7-46.

WOOL BLENDS. Preparation of wool blends for carding. Anon. *Wool Record & Textile World 69,* 842, 844-5 (Apr. 18, 1946).

Practical suggestions are given for achieving uniformity and strength in carding all-wool blends (generally consisting of wool of 2 or more different qualities).
TTD:7-46.

CARD STOP MOTION. Benj. F. Underwood & John C. Grant. USP 2 400 275, May 14, 1946.

Foreign particles (metal, wood, and the like) embedded in the lap of fibers during carding actuate a stop motion to stop the feed roll and the doffer roll of the card.
TTD:7-46.

DRAWING ROLLERS. Saco-Lowell Shops. Brit. P. 573 353. *Textile Mfr. 72,* 219 (Apr. 1946).

Clearers for drawing rollers are adjustable for changes in roller spacing.
TTD:7-46.

OPENING. J. Hughes & J. Ball (to Glover, Croft & State, Ltd.). Brit. P. 573 396. *Textile Mfr. 72,* 219 (Apr. 1946).

A power raised platform simultaneously carries and feeds a number of bales of fibers to spiked rollers for combing.
TTD:7-46.

OPENING ASBESTOS FIBERS. L. C. Pharo. Brit. P. 573 407. *Textile Mfr. 72,* 219 (Apr. 1946).

Asbestos fiber masses are opened without breaking or tearing the individual fibers, by subjecting them to increasingly greater flexing and pressure.
TTD:7-46.

SLUBBING AND ROVING CONDENSER. Aktiengesellschaft Joh. J. Rieter & Cie. Brit. P. 573 784. *Textile Mfr. 72,* 221 (Apr. 1946).

A condensing apparatus for slubbings or rovings, particularly fine numbers, imparts a false twist before they enter the drawing rollers.
TTD:7-46.

FIBER CUTTER. Jan V. Weinberger. Can. P. 434 957, May 28, 1946.

A fiber cutting machine consists essentially of a grooved fiber holder and a number of rotary cutters.
TTD:7-46.

DRAFTING. Jos. B. Rumsey (to Canadian Industries, Ltd.). Can. P. 434 971, May 28, 1946.

Tow is directly converted to top by means of a gill drafting frame, which cuts continuous filaments into fibers to form a sliver.
TTD:7-46.

PROCESSING FIBERS. "Texis" S. A. Textile. Swed. P. 116 394, Mar. 15, 1943. *Svensk Papperstidning 49,* 263 (June 15, 1946).

Fibrous materials are treated with a solution of a specially formulated urea-formaldehyde resin and a solution or dispersion of a fatty acid or soap. The treated material is then dried and exposed to the action of a halogen.
TTD:7-46.

Spinning — III 2

BIG PACKAGE SPINNING. Anon. *Textile Weekly 37,* 818, 820, 822 (Apr. 26, 1946).

Practical suggestions are given for increasing size on existing ring frames; there is no attempt to show how to convert a weft or twist ring frame into a large package frame.
TTD:7-46.

DOUBLING. Folded yarns. J. H. Peacock, Sam'l. Moorhouse, Ltd. *Textile Weekly 37,* 670, 672, 674, 718, 720, 722 (Apr. 5, 12, 1946).

In a review of the art of doubling, greater strength for a given count and a more even yarn are emphasized as important reasons for folding yarns. Careful choice of the most suitable single yarn for doubling is essential. The ring doubler, most commonly used today, is briefly discussed and suggestions for its operation and maintenance given. Among the various uses for folded yarns that in the lace trade is noted particularly. Two Jardine lace machines (one 222" the other 480" wide) are illustrated.
TTD:7-46.

TRAVELERS. Ring spinning and twisting travelers. J. McDowell McLeod, Carter Traveler Company, *Can. Textile J. 63,* No. 7, 34 (Apr. 5, 1946).

Methods of manufacture are briefly described and suggestions for prolonging the usefulness of travelers are given.
TTD:7-46.

SLUBBING DEVICE. Jas. R. Tennant. USP 2 400 663, May 21, 1946.

An improved slubbing attachment for spinning frames, which is both right and left, has few working parts, is easily installed and operated, and predetermines the relative spacing of lumps or slubs produced in the yarn. A smoother, stronger yarn is produced by intermittently starting and stopping the front roll at predetermined intervals so that no strain is imposed on the yarn.
TTD:7-46.

TWISTING STRANDS. Arthur P. Lewis (to U. S. Rubber Co.). USP 2 400 697, May 21, 1946.

An improved yarn twister twists strands together to form ply constructions, at the same time maintaining a uniform tension on all the strands being twisted.
TTD:7-46.

YARN GUIDE. Linton L. Jones. USP 2 401 249, May 28, 1946.

A yarn guide for a twisting or spinning machine, that

eliminates the flyer (or traveler) and requires no oiling is adapted to all types of yarn (cotton, rayon, silk, wool, etc.). TTD:7-46.

PLASTIC TRAVELER. Wm. M. Camp (to Clark Thread Co.). Can. P. 434 973-8, May 28, 1946.

A traveler with a metallic core has a wearing surface composed variously of a plasticized cellulose acetate, a polyvinyl chloride, an acrylic polymer, a polyvinylidene chloride, a polystyrene, or an ethyl cellulose. TTD:7-46.

SPINNING RAYON. P. A. Nikles, Swed. P. 116 271, Jan. 4, 1945.

In a hydraulic drive for the yarn-handling mechanism on a spinning frame the stroke of the piston is controllable according to the desired shape of the yarn package. TTD:7-46.

Winding — III 3

WEFT WINDERS. Interesting Swiss weft winders. Anon. *Fibres, Fabrics & Cordage 13,* 192 (May, 1946).

The Schärer LNS automatic pirn winder (for linen, cotton, and wool) is described and illustrated. TTD:7-46.

WINDING and copping on the mule. E. T. Kearsley. *Textile Mfr. 72,* 183-4 (Apr. 1946).

Suggestions are given for producing well proportioned cops which include the builder nose, the locking plate, and the setting of faller shafts and sickles. TTD:7-46.

WINDING AND WARPING. E. Brierley, Thos. Holt, Ltd. *Textile Weekly 37,* 678, 680, 682, 712, 714, 716, 778, 780, 782 (Apr. 5, 12, 19, 1946).

In a general survey the various stages of development and change are traced. Fairly detailed cost comparisons for automatic cone and pirn winders are considered. TTD:7-46.

WINDER. Walter Schweiter. USP 2 401 516, June 4, 1946.

A winder that winds hollow cops of yarn has a rotary spindle to which yarn is continuously fed. TTD:7-46.

THREAD GUIDE. Howard S. Peterson. Can. P. 434 553, May 7, 1946.

A thread guide consists of a spool with an insert pin at the upper end, upon which is mounted a rotatable sleeve, and next to the pin an anchor guide. TTD:7-46.

Yarn processing — III 4

NARROW FABRIC WARPER. Anon. *Textile Age 10,* No. 4, 102, 104 (Apr. 1946).

A warper (Wamesit Warper Co.) that winds 2 beams simultaneously is briefly described. TTD:7-46.

YARN PROCESSING. Loading stretch rolls on the Nasmith comber. Arna Jacobsson, *Textil och Konfektion 3,* 229-30 (June-July 1946).

Illustrated description of the Platt-Pierrepont patent weight relieving motion for controlling the application of load to the 5 stretch rolls of the Nasmith machine. TTD:7-46.

Yarn products — III 5

ROPE. Richard F. Warren, Jr. USP 2 400 181, May 14, 1946.

A rope is made from spiral strands of a synthetic organic polymer, preferably vinylidene chloride (Venalloy). TTD:7-46.

CABLE. Albert E. Winslow (to Farrel-Birmingham Co., Inc.). USP 2 400 323-5, May 14, 1946.

An improved wire stranding machine is particularly designed for relatively light weight wire strands to form into cables. Such cable is stress free so that when cut it does not tend to spread apart. In finishing threads a coating or size is applied and the thread dried in a controlled heat chamber. The finished thread is then taken up on a packaging machine which maintains a uniform tension during winding. TTD:7-46.

NYLON RACKET STRING. Albert F. Smith (to E. I. du Pont de Nemours & Co.). USP 2 401 291, May 28, 1946.

Instead of nylon monofils, a twisted multifilament nylon yarn, coated with an abrasion resisting composition such as one of the polyesters, polyacetals, or preferably one of the synthetic linear polyamides, forms a durable resilient string for rackets (tennis, squash, badminton, etc.). TTD:7-46.

YARN TO FABRIC — IV

Warp sizing — IV 2

WARP SIZING. Controlling stretch at the slasher. Little B. Hudson. *Cotton 110,* No. 4, 57-8 (Apr. 1946).

Practical suggestions for controlling stretch are given; among several places on the slasher where stretch may be controlled are: at the creel, size box, and delivery roll. TTD:7-46.

Weaving — IV 3

FANCY WORSTEDS: High speed warping and weaving. F. H. Brook. *Textile Mfr. 72,* 181-2, 184 (Apr. 1946).

Production of fancy worsteds, for men's suiting, with high speed warpers and automatic looms is described. Suggestions for 120-loom mill, to produce 500 pieces per week, include machinery and personnel requirements. TTD:7-46.

JUTE AND LINEN weaving practice. III. Systems of warp preparation. S. A. G. Caldwell. *Textile Mfr. 72,* 201-3 (Apr. 1946).

Chain or link warping is advantageous when yarn must be transported some distance for weaving. Beam warping is much used in jute and linen making. Both methods are briefly discussed. TTD:7-46.

RAYON WEAVING. Aids in weaving of rayon. J. W. Hutchinson, *Can. Textile J. 63,* No. 7, 37-8 (Apr. 5, 1946).

Practical suggestions given for rayon weaving include discussion of the let-off motion, back rest, reed and shuttle race, delivery and traverse of shuttle, etc. TTD:7-46.

WEAVE DESIGN. New design by weave interchange. Alex J. Bennett, *Indian Textile J. 56,* 625-6 (Apr. 1946).

Novel patterns are discussed with the aid of weave design diagrams. TTD:7-46.

WEAVING. Making of cloth in a worsted loom—I. J. W. Hutchinson, *Fibres 7,* 129-32 (May, 1946).

A survey discusses weaving of worsted cloth on a Hattersley standard loom and describes particularly the style of frogs and the overpick motion. TTD:7-46.

WEAVING MACHINERY. Lubricants and lubrication with special reference to weaving machinery. V. A. Ajgaonkar, *Indian Textile J. 56,* 639-46 (Apr. 1946).

Correct lubricants and lubrication are inherent in an adequate program of maintenance for weaving machinery. TTD:7-46.

WEAVING PRACTICES. Care of shuttles and warps. W. Middlebrook, Brocklehurst-Whiston Amalgamated, Ltd. *Textile Mfr. 72,* 204-6 (Apr. 1946).

Efficiency in weaving comes from properly organized training and attention to details. Practical suggestions for shuttle care are given. Correct knot tying and attention to spare ends are important points in warp care. TTD:7-46.

WARP DRAWING. Russell P. Drake (to Barber-Colman Co.). USP 2 400 342, May 14, 1946.

An improved pattern control mechanism for warp drawing-in machines by means of a perforated pattern sheet positively actuates a series of feelers. TTD:7-46.

KEY TO WEAVING. Mary E. Black, Bruce Publishing Co., Milwaukee, Wis. 1945; 312 pp.; price $5.00.

Reviewed in *J. Home Econ. 38,* 366 (June, 1946). TTD:7-46.

Looms IV 3 a

LOOM BANGING-OFF. D. C. Snowden, Leeds Univ. *Wool Record & Textile World 69,* 847-9, 898-9 (Apr. 18, 25, 1946).

The causes and effects of banging-off are analyzed. Two ways in which banging-off may occur are: (1) when the shuttle is fully home in the box, (2) when the shuttle has not reached or has not fully entered the far box. TTD:7-46.

LOOM MAINTENANCE. Proper start means longer loom life. Eugene P. Schremp. *Textile World 96,* No. 4, 149, 220, 222 (Apr. 1946).

Practical maintenance suggestions for new looms include proper spacing and setting, leveling and cushioning against excess vibration, and careful lubrication. TTD:7-46.

GAUZE WEAVING LOOM. Maurus Banyai (to M. Banyai, Ltd.). USP 2 401 452, June 4, 1946.

A semi-gauze fabric is woven on an improved warp-shedding mechanism. TTD:7-46.

Loom parts IV 3 b

WARP BEAM. Simple warp beam weighting motion. Anon. *Textile Recorder 63,* No. 757, 38 (Apr. 1946).

A weighting system, which eliminates the removal or adjustment of weights during weaving, the Rolawate weighting motion (Butterworth & Dickinson, Ltd.) can be fitted to a loom. A photograph shows the loom with the attachment. TTD:7-46.

LOOM LAY MOTION. Norman Fletcher (to Crompton & Knowles Loom Wks.). USP 2 399 728, May 7, 1946.

By means of a pair of cooperating cams the lay of an Axminster loom is positively driven so that backlash is eliminated. TTD:7-46.

SHUTTLE CHECK. Elliot A. Santon (to Crompton & Knowles Loom Wks.). USP 2 399 762-3, May 7, 1946.

A shuttle check for a floating binder of a loom, which resists outward movement of the binder by means of a friction strap, is mounted on the lay. TTD:7-46.

SHUTTLE CHECK. Carl D. Brown (to Draper Corp.). USP 2 399 851, May 7, 1946.

A binder pivotally mounted on the shuttle box of a loom has resilient rubber cushions which check the shuttle and at the same time prevent its rebound. TTD:7-46.

LOOM PART. Albert Moessinger (to Sulzer Frères S. A.). USP 2 399 881, May 7, 1946.

A shuttle guide, particularly for weft inserting devices, which reduces knocks and consequent friction against the warp threads has a comparatively large pitch with good running quality. TTD:7-46.

LOOM LINT REMOVER. Richard G. Turner (to Crompton & Knowles Loom Wks.). USP 2 400 792, May 21, 1946.

On a weft replenishing loom an air cleaning system in cooperation with a pneumatic waste thread collector removes lint (largely found around the warp sheds). TTD:7-46.

LOOM THREAD REMOVER. Richard G. Turner (to Crompton & Knowles Loom Wks.). USP 2 400 963, May 28, 1946.

An improved pneumatic thread remover for a weft replenishing loom is mounted on the shuttle feeler, which has a thread placer for lifting the thread to the remover. TTD:7-46.

LOOM THREAD HOLDER. Walter H. Wakefield (to Crompton & Knowles Loom Wks.). USP 2 401 593, June 4, 1946.

On a weft replenishing loom of the multistack type a pneumatic thread holder has tubes with intake mouths to receive and tension the weft ends and also separate them into groups. TTD:7-46.

BOBBIN SUPPORT. Geo. F. Belforti. USP 2 401 602, June 4, 1946.

An improved support for a bobbin receptacle, which is more readily accessible, allows the receptacle to be moved out of filling carrier receiving position. TTD:7-46.

CIRCULAR LOOM SHEDDING. Saint Frères S. A. Brit. P. 573 560. *Textile Mfr. 72,* 220 (Apr. 1946).

A change-over device for circular looms prevents breaking of sheds in case 2 become entangled. TTD:7-46.

Control devices — IV 3 c

STOP MOTIONS. Electrical warp stop motions XI. I. Laird. *Textile Mfr. 72,* 187-8, 192 (Apr. 1946).

A German stop motion with interchangeable end-eyes and a Swiss stop motion having the advantages of the open end and closed droppers, are described with the aid of diagrams. TTD:7-46.

WEAVING. Detector and return device on the Schönherr loom. Bertil Melin, AB Skanska Ylle-fabriken. *Textil och Konfektion 3,* 75-82 (Mar. 1946).

Illustrated description of the construction and operation of the loose end detector and the reverser on the Schönherr loom. The reverser was first developed about 1935 but some improvements have been introduced since that time. The detector has an eccentric with a normal position, 2 positions of maximum and 2 positions of minimum radius against the roller. TTD:7-46.

WARPING STOP MOTION. Fritz Lambach & Walter Siegel (to Robert Reiner, Inc.). USP 2 400 556, May 21, 1946.

A stop motion control for a warping or beaming machine consists of a drop, or control, needle (whose operation is unaffected by dust or lint), which is easily threaded without the use of a threading hook. TTD:7-46.

WARP TENSION. Saint Frères S. A. Brit. P. 573 398. *Textile Mfr. 72,* 219 (Apr. 1946).

A warp tension regulator on a circular loom is synchronized with the beat-up. TTD:7-46.

Fabric construction — IV 3 d

LINEN-LIKE FABRICS can be woven from rayon. S. A. G. Caldwell. *Textile World 96,* No. 4, 145, 147 (Apr. 1946).

Rayon, particularly viscose, spun on the flax spinning system can be woven into fabric of linen-like appearance. A crease-resistant finish, used in England, that increases the stiffness of the fabric, is discussed. Carding suggestions are given, along with a table showing settings for 5-roll full circular cards. TTD:7-46.

NOVEL FABRIC EFFECTS. Mayo twill and its developments; Shetland and homespun tweeds; dress and costume fabrics for export. Portex. *Wool Record & Textile World 69,* 733, 736, 787-8, 901-2 (Apr. 4, 11, 25, 1946).

Among 8-end weaves the Mayo twill gives interesting pattern effects. Pattern designs in Shetland and homespun tweeds are suggested. Stripe effects in dress fabrics are discussed. TTD:7-46.

RAYON BLEND FABRIC. Spun rayon blend suiting viscose-acetate fabric. Anon. *Am. Wool Cotton Reptr. 60,* No. 14, 49, 51, 53, 56-7 (Apr. 4, 1946).

There is an increasing trend to fiber blending in fabrics; use of a card for blending is discussed. Humidification is an important consideration in all blending. The effect of high twist in single and ply yarns is considered. TTD:7-46.

SELVAGES. Albert Moessinger (to Sulzer Frères S. A.). USP 2 399 880, May 7, 1946.

In forming selvages of fabrics woven on gripper shuttle looms, warp binding threads are unwound from 2 separate bobbins mounted in a continuously rotating carrier, through a Geneva-gear mechanism. TTD:7-46.

NONCURLING FABRIC. Ross C. Whitman (to Kendall Co.). USP 2 400 182, May 14, 1946.

A woven fabric for use in dress goods, curtains (e. g. organdy, lawn, etc.), tapes, ribbons, etc., which have little or no tendency to curl consists of yarns twisted in the same direction for both warp and filling. TTD:7-46.

NONCURLING FABRIC. Ross C. Whitman (to Kendall Co.). USP 2 400 276, May 14, 1946.

A fabric having no tendency to curl is woven of oppositely twisted yarns, and is of use in dress goods and curtain fabrics. TTD:7-46.

Weave defects **IV 3 e**

CLOTH DEFECTS traceable to poor weave-room practices. A. C. Robert. *Textile Age 10,* No. 4, 52, 54, 56-7 (Apr. 1946).

Careless practices and inadequate training of weavers lead to poor cloth. Transposed colors, uneven warp tension, filling bars and the remedies for these defects are among the topics briefly discussed. TTD:7-46.

Knitting machines **IV 4 a**

CIDEGA KNITTING MACHINE. Wm. E. Shinn, N. C. State College, School of Textiles, *Knitter 10,* No. 4, 48-9 (Apr. 1946). Reprinted from *Textile Forum.*

The Cidega knitting machine (commonly called a loom) is a flat bed warp knitting machine, each needle being supplied with its own warp thread. This machine knits a wide variety of fabrics, a few of which are illustrated and diagrammed. The basic element in a Cidega fabric is a knitted chain that extends in a straight line through the fabric. TTD:7-46.

JERSEY KNITTING MACHINE. Anon. *Knitter 10,* No. 4, 42 (Apr. 1946).

A new jersey knitting machine (H. Brent & Co.) is briefly described and illustrated. TTD:7-46.

KNITTING MACHINE. Roy C. Amidon (to Vanity Fair Mills, Inc.). USP 2 400 524-6, May 21, 1946.

On a flat tricot knitting machine, particularly designed to knit pile fabrics without the use of looper hooks or movable loop pullers, an improved yarn feed consists essentially of an intermittent drive for each warp beam which turns the warp beam in a timed relation to the yarn consumption so that such irregularities in the fabric as stop-marks are eliminated. TTD:7-46.

KNITTING MACHINE. Henry H. Holmes & Alfred P. Saunders (to Wildt & Co., Ltd.). Can. P. 434 788-9, May 14, 1946.

A circular knitting machine for producing tubular knit fabric has plain and rib needle cylinders with independent double-ended needles and a picker mechanism that automatically narrows and widens the fabric. TTD:7-46.

KNITTING MACHINE. Sam'l. E. Brillhart (to Western Electric Co., Inc.). Can. P. 435 032. May 28, 1946.

A knitting machine with stationary thread supplies has needles of different lengths reciprocably mounted in a needle cylinder actuated by a cam ring. TTD:7-46.

CIRCULAR KNITTING MACHINE. Reginald F. Raven & Harry A. Raynor. Can. P. 435 057, June 4, 1946.

A circular knitting machine with cylinder and dial needles knits a rib fabric having elastic weft threads. TTD:7-46.

Knitting machine parts **IV 4 b**

KNITTING NEEDLES vary infinitely in design. Max C. Miller, Thompson Hill. *Textile World 96,* No. 4, 103-16 (Apr. 1946).

A review of the design and development of knitting needles includes discussions and illustrations of the many varied types now in use. Closing of the hook is still the major problem. Spring beard, latch, and bolt are among the different kinds of needles discussed. TTD:7-46.

YARN FEED. Oscar Fregeolle (to Hemphill Co.). USP 2 399 729, May 7, 1946.

A yarn feed for a circular independent needle knitting machine consists of a yarn lever with outside binder and cutter, mounted on the underside of the carrier ring, which feeds from below, eliminates the need for a slot in the carrier ring that is dangerous to needle latches. TTD:7-46.

KNITTING NEEDLE. Roy C. Amidon (to Vanity Fair Mills, Inc.). USP 2 400 476, May 21, 1946.

A reinforced needle for warp knitting machines, which may be made of very fine gage without bending or breaking under strain, has a supporting sinker with a higher knock-over portion than the nib, that makes possible a shorter needle stroke. TTD:7-46.

KNITTING NEEDLES. Oscar Fregeolle (to Hemphill Co.). USP 2 400 636, May 21, 1946.

On circular independent needle knitting machines, particularly 2-cylinder machines, a needle leveler assures a definite even level for all the needles relative to the latch opener so that damage to the needle or the latch is avoided. TTD:7-46.

DUST REMOVER. Chas. Koppel. USP 2 401 083, May 28, 1946.

On a cylinder type knitting machine accumulated dust and lint are discharged by a channel in the cylinder wall through openings in the bottoms of the needle grooves, so formed that the needles are continuously cleaned by the scraping edges of the grooves. TTD:7-46.

HOSIERY KNITTING. Friedrich M. Wachtler & Donald G. Trutner (to Alfred Hofmann, Inc.). USP 2 401 531, June 4, 1946.

On a flat knitting machine for knitting full-fashioned hosiery, by an improved mechanism the welt bars are accurately positioned simultaneously for formation of the double ply welts without requiring separate manual attachment of draw-off straps. TTD:7-46.

KNITTING MACHINE DRAW-OFF. R. N. Toone & T. L. Allen (to B. Toone, Ltd.). Brit. P. 573 632. *Textile Mfr. 72,* 220 (Apr. 1946).

A draw-off mechanism for knitting machines consists of 2 oppositely rotating rollers having a series of resilient rubber projections. TTD:7-46.

HOSIERY MACHINES. C. C. Vanderhooven. Brit. P. 573 637. *Textile Mfr. 72,* 220-1 (Apr. 1946).

In knitting highly twisted rayon yarn a tension device keeps coils in place and prevents slack ends without hindering withdrawal. TTD:7-46.

KNITTING MACHINE PART. Wm. A. Cooper (to Wm. Cotton, Ltd.). Can. P. 434 877, May 21, 1946.

A straight bar knitting machine has a spring-coupled rotary drive for drawing off the fabric from the needles. TTD:7-46.

Control devices — IV 4 c

YARN CONTROL. Rudolph Bassist (55% to Harold H. Stern, Edith Abrams & Edith April). USP 2 400 064, May 14, 1946.

By means of an automatic stop motion, thread breakage or failure stops a warp knitting machine, thus assuring more accurate synchronization and smooth operation. TTD:7-46.

YARN CONTROL. Arthur N. Cloutier (to Hemphill Co.). USP 2 400 628, May 21, 1946.

In reciprocatory knitting on a split knitting machine (such as the Banner type) an improved yarn control take-up maintains yarn tension, taking up the slack whenever yarn is not under tension at the needles. TTD:7-46.

STOP MOTION. John J. Nesterowicz (to Van Raalte Co., Inc.). USP 2 400 837, May 21, 1946.

An electrical stop motion for tricot knitting machines is actuated by failure, breakage or lack of proper tension of the yarn or thread, whose electrical conductivity and hygroscopicity have been increased by prior immersion in a solution of glycerin, diethylamine, Glysorbine or the like, and a salt ($CuSO_4$, NaCl, Glauber's salt, etc.). TTD:7-46.

KNITTING YARN CONTROL. Thos. C. Bromley & Arthur Shortland (to Mellor Bromley & Co., Ltd.); Thos. C. Bromley & Arthur Shortland. Can. P. 434 698-9, May 14, 1946.

On a circular knitting machine for knitting seamless hosiery, a yarn control mechanism has take-up members (tension spring controlled for the stronger yarn, torsion spring controlled for the weaker yarn). TTD:7-46.

Fabric construction — IV 4 d

KNIT WEAR. John Chamberlain. *Textile Weekly 37,* 830, 832, 834 (Apr. 26, 1946).

A brief survey discusses stitches used in cotton and rayon knitting, laid-in fabrics, and warp-knitted fabrics. TTD:7-46.

TERRY FABRIC. Oscar Fregeolle (to Hemphill Co.). USP 2 400 637, May 21, 1946.

In knitting stockings, whether circular or reciprocatory, an improved type of terry construction consists of plain and terry loops except the initial loop of each course, which is a single body yarn only, the initial loop being bridged by a terry loop from the adjacent end loop of a previous course. TTD:7-46.

HOSIERY KNITTING. Wm. E. Booton & Horace Witts (to W. E. Booton, Ltd.). USP 2 400 805, May 21, 1946.

An improved method of knitting hose mainly by rotary knitting on a circular knitting machine provides for forming a fashioned leg, heel, instep and toe by control of needle activity. TTD:7-46.

KNIT FABRICS. Jas. E. Patton (to Davenport-Woosley Processing Corp.). USP 2 401 505, June 4, 1946.

A knit fabric with locked selvedges (i. e. stockings) is made on a flat knitting machine whereby the traverse of the yarn carriers is progressively increased without use of transfer points. TTD:7-46.

HOSIERY KNITTING. Sterling C. Mack (to Julius Kayser & Co.). Can. P. 434 604, May 7, 1946.

A full-fashioned selvedge stocking is a flat knitted fabric with a series of courses knitted from separate but identical yarns. TTD:7-46.

Pile fabrics — IV 5

COMPOSITE SHOE SOLE. Frank W. Clark (to Goodall-Sanford, Inc.). USP 2 400 487, May 21, 1946.

A pile fabric with an adhesively coated backing preferably has a ground of cotton and a body of mohair, the whole firmly imbedded in a flexible rubber composition (with the fibers projecting through). It makes a tough, durable material for shoe soles. TTD:7-46.

PILE FABRIC PADDING. H. L. Byrd & G. W. Robinson (to Drey Simpson & Co., Ltd.). Brit. P. 573 344. *Textile Mfr. 72,* 219 (Apr. 1946).

A shock absorbing material consists of 1 or more layers of a pile fabric, preferably animal fiber (wool, mohair, etc.), secured to a base of felt, wood, metal, etc., by rubber latex or a synthetic resin. TTD:7-46.

Narrow fabrics — IV 6

TAPE. John E. Fite, Jr. USP 2 400 924, May 28, 1946.

A foundation tape for slide fasteners is woven preferably of a high tenacity synthetic filament (rayon or nylon) of 1¼ denier or finer in staple lengths of about 1-9/16" in a 4-leaf twill weave. TTD:7-46.

BELTING. Wilfrid Lord & Herbert Riding (to Dunlop Tire & Rubber Corp.). USP 2 401 260, May 28, 1946.

Belting for power transmission consists of a rubber-impregnated single-ply (instead of the usual 5-ply) woven fabric, weighing 45 oz. or more per sq. yd., with 12 warp threads and a maximum of 6 weft threads per in. TTD:7-46.

Fabric processing — IV 8

RAYON SELVAGE. Glenn F. Womble (to Riverside & Dan River Cotton Mills, Inc.). USP 2 400 327, May 14, 1946.

In order to strengthen the selvage of rayon fabrics, reducing their tendency to tear during wet processing, a certain proportion of cotton threads (about 15 to 30%) is substituted in the selvage for the rayon. Instead of cotton other threads which do not weaken when wet are suitable and include linen, jute, hemp, ramie and some synthetics such as Saran and Vinyon. TTD:7-46.

Fabric applications — IV 9

TUBING. Warner Bros'. Spiratube unique flexible tubing. Anon. *Fibre & Fabric 99,* No. 3193, 11 (Apr. 13, 1946).

Spiratube, a flexible tubing, has a spiral stitched spring coil within a long fiber duck fabric having a bursting strength of 170 psi, and may be used for pressure or suction work. TTD:7-46.

COATED MATERIAL. Leander H. Hills & Alexander L. Gordon (to Vellumoid Co.). USP 2 399 804, May 7, 1946.

In making gasket materials, a natural or synthetic rubber coating (synthetic if it is to be oil-resistant) is bonded to a base material such as non-absorptive paper board or a cellulosic sheet material by means of a thermosetting synthetic resin (e. g. Vinsol). TTD:7-46.

LAMINATE. Henry Dreyfus, Wm. Walker & Jas. H. Rooney (to Brit. Celanese, Ltd.). USP 2 400 078, May 14, 1946.

Wood chips, sawdust, shavings, etc., are bonded together under varying pressures (150-1500 psi) by means of a thermoplastic binder such as cellulose acetate to form paneling or laminated sheet material useful in construction. TTD:7-46.

NONCURLING FABRIC. Ross C. Whitman (to Kendall Co.). USP 2 400 379, May 14, 1946.

A fabric, having little tendency to curl, for use as condenser and insulation cloths, shoe linings, radio spiders, etc., is made stiff and moisture-resistant by resin impregnation. TTD:7-46.

FABRIC PACKING RING. Malcolm R. Buffington (to Lea Fabrics, Inc.). USP 2 400 533, May 21, 1946.

Instead of leather or composition cup packings for oil well pumps, a preshrunk fabric is used which is first treated with about 2% methylcellulose solution and then impregnated with a synthetic rubber binder in an amount approximately equal to the weight of the fabric. In one example the impregnant consists of Neoprene 100, carbon black 40, ZnO 5, MgO 4, Neozone D 2, and cottonseed oil 5 parts by wt. TTD:7-46.

COATED AIRPLANE FABRIC. Vaile A. Cosler (to E. I. du Pont de Nemours & Co.). USP 2 400 918, May 28, 1946.

A more smoothly surfaced airplane wing which reduces air flow turbulence is formed by binding to the adhesively coated metal surface of the wing a fabric sheeting to which a natural or synthetic rubber polymer composition is calendered. In an example the sponge rubber layer consists approximately of: crepe rubber 60, whiting 25, ZnO3, petrolatum 6, stearic acid 5, $NaHCO_3$ 7, anti-oxidant 1, sulfur 2, accelerator 0.75, diphenylguanidine 0.15 parts by wt. TTD:7-46.

PUNCTURE SEALING TANK. Ernst Eger (to U. S. Rubber Co.). USP 2 401 625-7 June 4, 1946.

A puncture sealing gasoline tank is made of a laminated material comprising a layer of vulcanized rubber, a layer of latex and at least 2 layers of a woven fabric tightly bonded together. TTD:7-46.

COATED FABRIC. E. I. du Pont de Nemours & Co. Australian P. 120 666. *Textile J. Australia 21,* 96 (Apr. 1946).

A cellulose coating material for fabrics, applied by rolling or other means, is a kneaded mass (of a cellulose derivative dispersed with an alkyl ether or dimethylolurea) cured at a temperature of 107-150°C. TTD:7-46.

COATED FABRIC. L. A. Lantz & A. Schofield (to Calco Printers Ass'n., Ltd.). Brit. P. 573 574. *Textile Mfr. 72,* 220 (Apr. 1946).

A process for permanently filling or coating fabrics (such as an organdie) consists in impregnation with a solution of water-soluble partial polyvinyl alcohol, an aldehyde, and an acid catalyst. Example: a mercerized cotton lawn is treated with a solution of (%) 12.5 polyvinyl alcohol, 5.0 glycerin, 5.0 40% formaldehyde solution, and 1.0 monochloracetic acid. After man-

gling the fabric is dried at 105°C and soaked for 5 minutes at 60°C. TTD:7-46.

COATED AIRCRAFT FABRIC. A. Ryan (to Soco Rubber & Waterproofing Co., Ltd.). Brit. P. 573 758. *Textile Mfr. 72,* 221 (Apr. 1946).

A covering for aircraft frames consists of noncorrosive metal wires woven in 1 direction and yarn woven in the other treated with a flexible resin coating to which a rubber or plastic surface is calendered. TTD:7-46.

LAMINATED INSULATING SHEETS. Herbert C. Graves, Jr. (I-T-E Circuit Breaker Co.). Can. P. 434 601, May 7, 1946.

An insulating, flame resisting sheet material is composed of laminated sheets of asbestos and cellulose fibers in proportions ranging from 20 to 80% to 80 to 20% of asbestos fibers. TTD:7-46.

POLISHING CLOTH. Wm. Whitehead (to Camille Dreyfus). Can. P. 434 796, May 14, 1946.

A polishing cloth of cellulose acetate fabric produces an optically clean lint- and dust-free surface on highly polished glass. TTD:7-46.

COATED FABRIC. Jas. R. Myles, Donald Whittaker & Francis J. Siddle (to Canadian Industries, Ltd.). Can. P. 434 857, May 21, 1946.

A dope for treating fabric consists of a solution in a volatile solvent of material obtained by chlorinating solid polythenes at less than 60°C to a Cl content of 60-70 wt. %. TTD:7-46.

RESIN IMPREGNATED FABRIC. Robt. M. Paulsen (to Dominion Rubber Co., Ltd.). Can. P. 434 983, May 28, 1946.

A hard, noncracking surface is given to a fibrous sheet by applying to it a synthetic resin and then drawing the impregnated fabric between heated rolls to polymerize the resin. TTD:7-46.

CHEMICAL RAW MATERIALS V

Plastics V 1

PLASTICS. Silicones as new engineering materials. W. R. Collings. *Trans. Am. Inst. Chem. Engrs. 42,* 455-71 (June, 1946).

One of the many uses of silicones is as a laminating resin for glass and asbestos fabrics.
LCL TTD:7-46.

PLASTICS TECHNOLOGY. Recent significant developments in plastics. Robt. J. Moore, Bakelite Corp. *Mech. Eng. 68,* 531-6 (June, 1946).

A review, in which the new synthetic resins are emphasized. TTD:7-46.

POLYETHENE compared with other similar macromolecular hydrocarbons. R. Houwink. *Brit. Plastics 18,* 192-8 (May, 1946).

The properties, particularly the molecular structure, of polyethene are compared with those of other high-polymers; mechanical behavior, dissolving and swelling capacity, and electrical properties (especially dielectric constant and dielectric losses) are studied, with accompanying tables and graphs. TTD:7-46.

POLYVINYL RESIN. Marvinol—a new American plastic. Anon. *Textile Mfr. 72,* 206 (Apr. 1946).

Marvinol is a new polyvinyl resin (Glenn L. Martin Co.) suitable for a number of purposes: multicolored wire insulation, hospital sheeting, woven fabrics, hand bags, etc. TTD:7-46.

SYNTHETIC RESIN FINISHES for rayon piece goods. Eliz. F. Mann. *Silk & Rayon 20,* 618 (May, 1946).

A brief review. TTD:7-46.

CELLULOSE FILM. Chas. Bogin (to Commercial Solvents Corp.). USP 2 400 453, May 14, 1946.

A clear, durable film, or coating composition, consists of a cellulose acetate-butyrate in a hydrocarbon diluent such as xylene or toluene. TTD:7-46.

CELLULOSE COATING. S. M. Edelstein. Brit. P. 573 767-8. *Textile Mfr. 72,* 221 (Apr. 1946).

A cellulose coating is applied to fabrics by precipitating the cellulose, dissolved in a sodium zincate solution containing NaOH, upon the fabric and then drying. TTD:7-46.

ETCHING PLASTICS. British Celanese, Ltd. Brit. P. 573 779. *Textile Mfr. 72,* 221 (Apr. 1946).

A nonfibrous cellulose ester plastic material is etched by the action of H_2SO_4 in a concentration of not more than 75 vol. %; and the etched part may be painted or coated for a color contrast. TTD:7-46.

CELLULOSE DERIVATIVES. Wm. Horback (to Camille Dreyfus). Can. P. 435 187, June 4, 1946.

A plastic cellulose acetate material is made substantially opaque to ultraviolet light by having incorporated in it a fluoranthene compound (0.75 wt. % of the cellulose acetate). TTD:7-46.

Elastomers V 2

SILASTIC on market. Anon. *Fibre & Fabric 99,* No. 3193, 8 (Apr. 13, 1946).

Dow Corning's Silastic, silicone rubber, is an insulating material that can be used as a coating for glass cloth, metal, or wire. TTD:7-46.

Adhesives **V 3**

ADHESIVE PATCH. Frank M. Prestwich. Can. P. 434 831, May 21, 1946.

An adhesive reinforcing patch for garments consists of a thermoplastic laundry-resistant material that adheres to the garment upon application of moderate heat and pressure. TTD:7-46.

Surface-active compounds **V 4**

SURFACE-ACTIVE COMPOUNDS. Hugh H. Mosher, Onyx Oil & Chemical Co., *Am. Dyestuff Reptr. 35,* 168-73 (Apr. 8, 1946).

A survey of surface-active compounds includes brief discussions of their use as emulsifying agents, detergents, finishing and softening agents, in dispersions, and dyeing. TTD:7-46.

SYNTHETIC DETERGENTS. Anon. *Cotton 110,* No. 4, 114 (Apr. 1946).

Oratol L-48 and Sellogen A. S. D. Conc. are 2 new synthetic detergents (Jacques Wolf & Co.) for use on cotton, wool, silk, rayons, acetate, and Aralac fibers. TTD:7-46.

SURFACE ACTIVE AGENTS. THEORETICAL ASPECT AND APPLICATIONS. C. B. F. Young, Chemical Publishing Co., Inc., Brooklyn, N. Y.; 1945; 381 pp.; price $6.00.

Reviewed in *Am. Dyestuff Reptr. 35,* 185 (Apr. 8, 1946). TTD:7-46.

CHEMICAL PROCESSING VI

Preparation **VI 1**

DRYING. Technical developments in drying textiles: infrared and high frequency drying. Nils Gralen, Swedish Textile Research Inst. *Textil och Konfektion 3,* 125 (Apr. 1946).

Infrared drying has been in use for sometime in Sweden for drying coatings, and is coming into use for textiles. Because of high installation and operating costs dielectric drying is still in the experimental stage but it is considered probable that it can compete with present methods in certain yarn fixation operations such as twist setting. TTD:7-46.

DRYING machinery trends. W. H. Spooner. *Dyer 95,* 399-400, 408-9 (Apr. 26, 1946).

Some principles of drying are briefly discussed, and 2 machines (the Spooner hank dryer and wool dryer) are illustrated. TTD:7-46.

HOSIERY TREATING. Emil J. Berger & Howard W. Matthews (to Dexdale Hosiery Mills). Can. P. 434 588, May 7, 1946.

Apparatus for steam treating hosiery (as in preboarding) consists of a closed chamber with inlet and outlet steam valves. TTD:7-46.

INFRARED ON RAYON. Finishing plant uses infrared on rayon. Anon. *Textile World 96,* No. 4, 117 (Apr. 1946).

The use of infrared radiant heat as auxiliary drying units (by Waldrich Co.) for heavy rayon fabrics is briefly described with the aid of illustrations. TTD:7-46.

RADIO FREQUENCY DRYING. Rudolph A. Bierwirth (Radio Corp. of Am.). Can. P. 434 614, May 7, 1946.

A rayon cake is rapidly dried by drying in a fairly high vacuum for an hour, at 95° gradually raised to 125°F through an oscillating high frequency electrical field of about 25mc per second. TTD:7-46.

Milling; fulling **VI 3**

WOOL. Fulling properties of wool. Clas Franzen, Förenade Yllefabrikerna A. B. *Textil och Konfektion 3,* 223-5 (June, 1946).

The chemical composition and physical structure of wool fibers are discussed as related to the fulling behavior of different varieties of wool. Fulling behavior is a complex composite property of wool, and predictions are difficult to make. TTD:7-46.

Sizing **VI 6**

NYLON SIZING. Houghton to offer new nylon yarn sizing agent. Anon. *Knitter 10,* No. 4, 64 (Apr. 1946).

Houghto-Knit N is a new nylon hosiery sizing agent soon to be offered. TTD:7-46.

CARBOHYDRATE ETHERS. Alva L. Houk & Louis H. Bock (to Rohm & Haas Co.). Can. P. 434 617-9, May 7, 1946.

A water-soluble carboxyethylcellulose ether (such as for textile sizing) is made by treating fibrous cellulose at 10 to 25°C with a 20-30% hydroxide solution (e. g. NaOH) and about 1 to 2 mols of acrylonitrile. A water-soluble ether may also be made from starch, NaOH, and acrylonitrile. TTD:7-46.

SIZING TEXTILES. E. B. M. Heldmann (to Aktiebolaget Berol-Produkter). Swed. P. 116 305, Feb. 23, 1944.

A sizing composition for textiles is prepared from degradation products of proteins by reaction with sulfonated or sulfated fatty acids or alcohols or their esters or salts in presence of boric acid, phosphoric acid or a hygroscopic organic acid such as lactic or glycolic acid. TTD:7-46.

Finishing **VI 7**

FINISHING FLANNEL. Suggestions on finishing flannel fabrics. Anon. *Am. Wool Cotton Reptr. 60,* No. 17, 11 (Apr. 25, 1946).

The soft flannel handle is due largely to cloth con-

struction and material of which it is made. Warp shrinkage should be small. Brushes should not be used for shearing. Additional suggestions for fulling, washing, and drying are given. TTD:7-46.

FINISHING MACHINE. Batch processing unit does many finishing jobs. Anon. *Textile World 96,* No. 4, 157-8 (Apr. 1946).

The Williams unit (Morrison Machine Co.) is an economical machine equipped with a 5-ton microset nip stand, for continuous processing (dyeing, washing, saturating, preheating, etc.), and is made in standard machine widths from 40 to 70" face. TTD:7-46.

FINISHING MACHINERY. Modern improvements in finishing machinery. W. W. Spooner, Spooner, Dryer & Eng. Co., Ltd. *Textile Mfr. 72,* 211-13 (Apr. 1946).

Design and development of drying, steaming, and washing machines are reviewed. Four photographs show a wool dryer, a hank dryer, a stenter, and a washing machine. TTD:7-46.

NYLON FINISHING. Problems involved in dyeing and finishing nylon hosiery. Virgil T. Hartquist. *Textile Age 10,* No. 4, 42, 44, 46, 48, 50 (Apr. 1946).

A survey of some of the problems encountered discusses particularly the preboarding operation. TTD:7-46.

RAYON FINISHING. Calenders for tubular rayon fabric finishing. Anon. *Silk & Rayon 20,* 606-7, 614 (May, 1946).

The finishing of rayon knit fabric is briefly discussed, and diagrams and photographs of the Palmer and the Pegg calenders are shown. TTD:7-46.

SYNTHETIC RESIN FINISHES. Anon. *Dyer 95,* 413, 15, 17 (Apr. 26, 1946).

The value of synthetic resins in finishing is reviewed, particularly with reference to crease-resistance. TTD:7-46.

COLOR VII

COLORING INDUSTRY. Education and bleaching, dyeing, printing, and finishing industries. A. W. Doyle, *J. Soc. Dyers Colourists 62,* 101-8 (Apr. 1946).

Beginning with a brief historical background a survey of the development of technical education in England is given. A plea is made for the coloring industries further to consider improving the training of their employees. TTD:7-46.

LUMINESCENT FABRICS. Principles and uses of luminescent, fluorescent, and phosphorescent materials. Marta Harwood, Purdue Univ. *Rayon Textile Monthly 27,* 265-6 (May, 1946).

A brief general review, with a short historical background, discusses costs (now much lower than a few years ago) and the relatively limited uses of phosphorescent and fluorescent pigments (such as in the clothing of a signalman, which was made of cellulose acetate satin impregnated with photoluminescent pigment). TTD:7-46.

Bleaching VII 1

BLEACH-HOUSE. Post-war planning for the bleach-house. Batuklal C. Desai, *Indian Textile J. 56,* 627-8 (Apr. 1946).

Improvements in new bleach-houses are suggested: monel metal or stainless steel in place of wooden vats, battery trucks for goods instead of hand wagons, fluorescent rather than incandescent lighting, continuous bleaching and continuous pad-steam dyeing processes. TTD:7-46.

Dyeing VII 2

DYE SELECTION. Selection of dyestuffs for compound shades. K. E. Scott. *Textile Mfr. 72,* 176 (Apr. 1946).

Two considerations should govern in matching shades: selection of dyes giving highest color value and choice of dyes with equal dyeing rates. TTD:7-46.

DYEING garnetted woolen and worsted waste. Anon. *Dyer 95,* 397-9 (Apr. 26, 1946).

Chrome colors are commonly used to dye garnetted waste. Acid milling colors are often also used, particularly with wool-cotton union waste. TTD:7-46.

DYEING serge piece goods. Anon. *Dyer 95,* 305-6, 355-7 (Mar. 29, Apr. 12, 1946).

Practical suggestions are given for avoiding such faults as creases and crimps and for obtaining level dyeing when coloring carbonized serge piece goods. Uncarbonized serge goods offer no levelling problem. In dyeing inexpensive serge goods containing shoddy uneven dyeing often results from the presence of residual acids which interfere with the action of the detergent; use of a sulfonated fatty alcohol, instead of soap, is often an effective remedy. TTD:7-46.

DYEING acetate rayon and acetate-viscose rayon unions. E. Waters. *Dyer 95,* 323, 325, 327, 329 (Mar. 29, 1946).

The dyeing of acetate and viscose rayon unions by the use of dispersed and soluble colors is considered. Because of its alkali sensitivity acetate rayon should not be scoured with caustic alkali. TTD:7-46.

DYEING ASSISTANT. Dexter offers three-way wool dyeing assistant. Anon. *Fibre & Fabric 99,* No. 3195, 14 (Apr. 27, 1946).

Dexter Chemical's Telkanol O solution is a new combination detergent, leveling agent, and protective agent. TTD:7-46.

DYEING COTTON-ACETATE RAYON. Anon. *Dyer 95,* 318, 321-2 (Mar. 29, 1946).

From the effect of mercerization on the dyeing of cotton and acetate rayon fabrics, it appears that the better results obtained by dyeing after rather than before mercerization are due to less residual fats and waxes and greater smoothness of the cotton fibers.

TTD:7-46.

DYEING HESSIAN. Anon. *Dyer 95,* 349-51 (Apr. 12, 1946).

In applying vat colors to hessian the pigment pad process is considered superior to the jig. Several dyeing recipes are given. TTD:7-46.

DYEING OF CELLULOSIC FIBERS. E. Brecher. *Textile J. Australia 21,* 126-8 (Apr. 1946).

In a general discussion of the theory of dyeing cellulosic fibers with direct dyes particular consideration is given to the molecular structure of the fiber. Dyes are classified in 3 groups according to salt sensitivity and leveling properties. The influence of salt and temperature in dyeing is discussed with respect to 3 factors: degree of exhaustion, rate of exhaustion, and leveling. TTD:7-46.

DYEING RAYON AND NYLON. Effect of physical properties on dye absorption. Anon. *Silk & Rayon 20,* 623-5 (May, 1946).

The dyeing properties of rayon and nylon are discussed, the swelling behavoir of acetate rayon being noted particularly. The use of organic solvents, in which a large proportion of dyes are insoluble, is considered. TTD:7-46.

VAT DYEING. New method of vat dyeing yarn packages. Anon. *Dyer 95,* 403-4 (Apr. 26, 1946); *Textile Weekly 37,* 784, 786 (Apr. 19, 1946).

I. C. I.'s Abbot-Cox process is briefly discussed and 2 examples of the procedure given, an essential feature being that the dye is exhausted on the fiber before reduction. TTD:7-46.

VAT DYES. Emphasis on vat dyes in post-war period. Anon. *Am. Wool Cotton Reptr. 60,* No. 14, 79, 81, 83 (Apr. 4, 1946).

Vat colors and their durability are discussed in a survey, and among application methods the pad steam and the multilap processes are described briefly.

TTD:7-46.

VAT DYES. Formation of hydrogen peroxide during the oxidation of reduced vat dyes. W. Atherton and H. A. Turner. *J. Soc. Dyers Colourists 62,* 108-14 (Apr. 1946).

An experimental method is described for the catalytic reduction of anthraquinone and anthraquinonoid vat dyes. The quantitative relation between reduced quinone groups reoxidized and peroxide groups formed appears independent of tendering activity of the dye.

TTD:7-46.

WOOL SHODDY DYEING. Notes from the wool dyer. A. G. Warner. *Textile Bull. 70,* No. 3, 18, 20 (Apr. 1, 1946).

Practical suggestions are given for dyeing wool shoddy stock and include in addition brief mention of carbonization and stripping. TTD:7-46.

YARN DYEING. Processing procedures for modern yarn dyeing. Robt. W. Joerger, Franklin Process Co. *Cotton 110,* No. 4, 68-70 (Apr. 1946).

Chain-warp and skein dyeing are discussed. A rotating roller type of machine, a single box machine, and the Scotch tub are described and their operation illustrated by diagrams. TTD:7-46.

DYEING RAYON TYPE FABRICS. Cyril M. Croft & Walter H. Hindle (to Celanese Corp. of Am.). USP 2 399 627, May 7, 1946.

The dyeing properties of cellulose derivative fabrics are improved by first impregnating the fabric with Turkey red oil, drying and scouring. Fabric so treated may be dyed on a winch in level even shades, free of overdyed creases, cracking, etc. TTD:7-46.

Printing VII 3

COTTON PRINTING. Linton C. Reynolds, Riegel Development Laboratories, Inc. *Textile Colorist 68,* No. 5, 20-1, 49, 54 (May, 1946).

Printing of cotton goods is briefly reviewed and includes the application of vat dyes, Indigosols, naphthols, Rapidogens, and pigment printing. The pigment printing process is discussed in somewhat more detail particularly with reference to the resins used.

TTD:7-46.

PIGMENT PRINTING. G. T. Douglas, A. Hill & W. Todd (to I. C. I., Ltd.). Brit. P. 573 558. *Textile Mfr. 72,* 220 (Apr. 1946).

A fabric printing process comprises applying a water-in-lacquer pigmented emulsion containing a melamine-formaldehyde resin and a plasticizer in an organic liquid, and subjecting the printed fabric to heat to harden the resin and volatilize the liquid and water.

TTD:7-46.

PROOFING VIII

PROOFING FABRIC. Frederick C. Wood (to Tootal Broadhurst Lee Co., Ltd.). Can. P. 435 171, June 4, 1946.

Crease resistance and water repellency are imparted to cellulosic fabrics by treating them with a formaldehyde reagent and a quaternary ammonium salt.

TTD:7-46.

Waterproofing — VIII 1

TEXTILE WATERPROOFING. Kemmek. *Textile Weekly 37,* 736, 738 (Apr. 12, 1946).

A brief survey of a process for waterproofing khaki and a method for testing. An emulsion of a fat in an aqueous Al salt solution is employed. TTD:7-46.

WATER-REPELLENT COTTONS. J. J. Crowley, U. S. Testing Co., Inc. *Textile Colorist 68,* No. 5, 22-3 (May, 1946).

The theory of water repellency in cotton is briefly discussed along with some of the applications (e. g. children's play clothes, boat sails, flags, and slip covers). TTD:7-46.

WATERPROOFING. A. A. van der Hoeve (to Nico ter Kuile & Conen N. V.) Swed. P. Appl. 2452/44, Mar. 23, 1944.

A process for imparting water-repellent properties to textile fabrics. TTD:7-46.

Rotproofing — VIII 3

ROTPROOFING. Anon. *Tids. Textilteknik 4,* 72 (Apr. 1946).

News note concerning the weatherproofing and rotproofing effect of treating cotton with acetylene. Soil burial tests showed little damage to treated samples after 6 months, whereas an untreated sample failed within a week. TTD:7-46.

MILDEWPROOFING. L. Aashein. Swed. P. 116 158, Dec. 31, 1941.

Fabrics are protected from mildew and rot by impregnation with a metal salt bath containing a soap solution, particularly soaps from fatty acids found in certain wood tars, so that difficultly soluble metal soaps are precipitated on and in the fabric. TTD:7-46.

Flameproofing — VIII 4

FLAMEPROOFING. East African research on fireproofing. Anon. *Fibres 7,* 122 (May, 1946).

The second annual report (1944) of the East African Industrial Research Board on fireproofing fabrics is briefly reviewed. TTD:7-46.

FLAMEPROOFING. Durable flameproofing suitable for cotton outer garments. K. S. Campbell & J. E. Sands, Southern Regional Research Laboratory, USDA. *Textile World 96,* No. 4, 118-19, 222, 226 (Apr. 1946).

A laundry-resistant, flameproofing treatment of cloth for use in work uniforms and life jackets, etc., applied by a 2- or 3-roll padder, imparts to the fabric a full, soft, waxy hand and gives a 30-60% gain in weight. The flameproofing finish consists essentially of a urea-formaldehyde resin monomer and chlorinated paraffin in a suitable solvent (e. g Stoddard). TTD:7-46.

FLAMEPROOFING CELLULOSE. Chas. A. Thomas & Gennady Kosolapoff (to Monsanto Chemical Co.). USP 2 401 440, June 4, 1946.

Cellulosic fibers are made flame-resistant by treating them first with phosphoryl chloride in dry pyridine at about 70°C and then further treating with dry NH_3. TTD:7-46.

FIRE-RESISTANT FABRICS. L. A. Jordon & L. A. O'Neill. Brit. P. 573 471-2. *Textile Mfr. 72,* 219-20 (Apr. 1946).

Fire and smolder resistance is imparted to fabrics by incorporating in them by precipitation Fe or Sn oxides along with a proportion of Sb or As oxides or sulfides. TTD:7-46.

Creaseproofing — VIII 5

CREASEPROOFING PILE FABRIC. Jos. Tankard & Frederick C. Wood (to Tootal Broadhurst Lee Co., Ltd.). Can. P. 435 045, May 28, 1946.

Crease-resistance and water-repellency are imparted to a pile fabric by treating with a formaldehyde reagent and a quaternary ammonium salt. TTD:7-46.

Shrinkproofing — VIII 6

RESINS FOR TEXTILES. Shrinkproofing wool by resin impregnation. Nils Gralen, Swedish Textile Research Inst. *Textil och Konfektion 3,* 228-9 (June, 1946).

A review of American and European practice in the application of synthetic resins to wool for control of shrinkage. TTD:7-46.

SHRINKPROOF FINISH on wool-rayon mixtures. Anon. *Dyer 95,* 417, 419, 421 (Apr. 26, 1946).

The 3 main processes for shrinkproofing wool are compared: by active halogens such as Cl and Br, synthetic resins, and strong alkalies such as caustic soda or acids such as sulfuryl chloride. TTD:7-46.

SHRINKPROOFING WOOL. Archibald J. Hall & Frederick C. Wood (to Tootal Broadhurst Lee Co., Ltd.). USP 2 401 479, June 4, 1946.

A nonfelting treatment for wool, whether in fiber, yarn, or fabric form, consists in treating the wool at less than 60°C with a caustic alkali dispersed in a liquid hydrocarbon. TTD:7-46.

Stabilizing — VIII 7

FABRIC STABILIZATION. O. Albrecht (to Ciba S. A.). Swed. P. 116 220, Jan. 22, 1942.

Fabrics are stabilized against shifting of yarn positions by treatment with a solution or dispersion of a cation-active compound containing a resinous or resinifiable group linked to a phenolic group by the radical CH_2. The phenolic group serves to increase the water solubility of the compound. TTD:7-46.

TESTING AND ANALYSIS IX

Physical properties IX 1

ABRASION. Measuring the abrasion resistance of fabrics. Lennart Carlholn, A. B. Skanska Ylle-fabriken. *Textil och Konfektion 3,* 168-9 (May, 1946).

Illustrated description of the Schopper and Schopper-Dahlen abrasion testers, and their use in testing fabrics. Difficulties in correlating abrasion tests with actual wear tests are discussed. TTD:7-46.

ELECTRICITY. Textile problems on static electricity. H. E. Wenrich. *Rayon Textile Monthly 27,* 249-51 (May, 1946).

A discussion of the various types of static eliminators applied to drawing frames, warpers, cards, etc. The units are relatively small and easily installed and should find many applications in textile mills.
HAM TTD:7-46.

FABRIC TESTING. Effect of fiber content and care on resiliency, thickness, and thermal conductivity of blankets. Pearle A. Gilmore & Katharine P. Hess. *Rayon Textile Monthly 27,* 252-6 (May, 1946).

Test data on 13 sample blankets are tabulated in 6 tables and 3 graphs. All-wool, blends of wool with cotton, rayon, and Aralac, cotton, and paper blankets were studied. TTD:7-46.

FABRIC WEAR TESTER. Advanced fabric wear tester. W. H. Masterson, Better Fabrics Testing Bureau. *Am. Dyestuff Reptr. 35,* 192-204 (Apr. 22, 1946).

A tester, most suitable for velvets and fine goods, is briefly discussed and 8 principles considered desirable in any fabric wear tester are listed. TTD:7-46.

HEAT RETENTION. A method for determining the heat properties of fabrics. Curt Linden. *Textil och Konfektion 3,* 21-5 (Feb. 1946).

Thermal conductivity measurements have been compared with radiation measurements for about 20 types of woven stockinette of various fibers such as cotton, rayon, rayon staple and their blends. The radiation data show good agreement with the thermal conductivities but are not useful for establishing detached values. Nap fabrics are superior in heat protection value, and stockinette weaves are superior because their porosity is favorable. Filament rayon is inferior and rayon staple is superior to cotton in heat retention as a comfort factor for garments.
TTD:7-46.

MODERN TESTING LABORATORY. Walter S. Sondhelm. *Textile Recorder 63,* No. 757, 40-1 (Apr. 1946).

General laboratory equipment needs are outlined.
TTD:7-46.

TESTING. Quality is the goal of textile testing. Anon. *Textil och Konfektion 3,* 120-1 (Apr. 1946).

Illustrated description of fiber, yarn and fabric testing instruments employed in the testing laboratories of woolen mills, and a discussion of the significance of the tests. TTD:7-46.

TESTING of yarns and fabrics. IV. N. Eyre. *Textile Mfr. 72,* 178-80 (Apr. 1946).

Methods of measuring the degree of twist and strain in yarns and of determining staple length in rayon staple yarns are described. Five photographs of testers include a Rock bank, a Baer sorter, and a Shirley crimp tester. TTD:7-46.

YARN GRADING. A. H. Milnes, Cook & Co., Ltd. *Textile Weekly 37,* 824 (Apr. 26, 1946).

In grading yarn the factors to be considered, besides statistical, should include appearance, cleanliness, luster, smoothness, and regularity. TTD:7-46.

Chemical analysis IX 2

DYEING CELLULOSE. Dyeing properties of cellulose. Anon. *Textile Weekly 37,* 732, 734 (Apr. 12, 1946).

The effects of polarized light and dichroic phenomena are considered in detail. TTD:7-46.

FABRIC TESTING. Application of the barium number determination. Sidney M. Edelstein, Dexter Chem. Corp. *Rayon Textile Monthly 27,* 260-2 (May, 1946).

The Ba number may be used to determine the degree of mercerization of cotton yarns or fabrics. A description of the method is given and also an extensive bibliography.
HAM TTD:7-46.

TESTING RAYON FASTNESS. Evaluation of fastness to atmospheric fumes of dyed cellulose acetate rayon. Anon. *Am. Dyestuff Reptr. 35,* 174-6 (Apr. 8, 1946).

A tentative testing method is outlined and 5 photographs show a new type of gas fading apparatus (U. S. Testing Co.). TTD:7-46.

Biological Testing IX 3

MILDEW RESISTANCE OF FABRICS. Resistance of treated cotton fabrics to attack by termites and micro-organisms. R. A. St. George, USDA Bureau of Entomology and Plant Quarantine, and Margaret S. Furry, USDA Bureau of Human Nutrition and Home Economics.

The effectiveness of 16 finishing treatments applied to cotton fabrics is tested and evaluated; generally it was found that finishing treatments that protected against termite attack also gave resistance to attack by microor-

ganisms. Results are tabulated in 2 tables, accompanied by photographs of the test strips. TTD:7-46.

Specifications — IX 4

FABRIC WIDTH. Wool manufacturers also desire uniform fabric width. Gunnar Lagnell, Svenska Yllekoncernen. *Textil och Konfektion 3,* 13-16 (Feb. 1946).

It is more important for the wool industry to provide an unshrinkable fabric than to attempt exactly uniform widths without any tolerance. Moreover it is impossible at present to standardize fabric widths to exact limits, since some variation is bound to occur. There are many reasons for this, but most of them stem back to the fact that the wool fiber is a living material. TTD:7-46.

STANDARDS. World trade and the technologist. Herbert J. Wollner, United Nations Standards Coördinating Committee. *Can. Textile J. 63,* No. 8, 39-41 (Apr. 19, 1946); *Textile Bull. 70,* No. 4, 31-2, 34 (Apr. 15, 1946).

The work of the coördinating committee on standards in textile testing is outlined, with 17 member nations listed. International standardization is proposed and 94 test methods are offered for consideration. TTD:7-46.

WASTES — X

FIBROUS WASTE. How Am. Felt Co. treats waste effluent. Geo. Ransom. *Textile Age 10,* No. 4, 58, 60, 62, 64 (Apr. 1946).

Methods of waste treatment are briefly discussed with the aid of a diagram of the purification plant, important features of which are the sump tank, into which the effluent is discharged, and a stainless steel screen removes 90% of the waste fiber. TTD:7-46.

HAZARDS — XII

BOILER BLOW-OFF DANGERS. Edw. Ingham. *Dyer 95,* 369 (Apr. 12, 1946).

Prevention of accidents from boiler blow-off systems lies in the use of more suitable material than cast iron for the blow-off pipes, e. g. cast steel, wrought iron, copper. TTD:7-46.

MODEL INDUSTRIAL MEDICAL DEPARTMENT. Anon. *Textile Bull. 70,* No. 4, 36, 38, (Apr. 15, 1946).

A small plant dispensary (suggested by Am. Mutual Liability Ins. Co.) is discussed with accompanying architect's drawing of the layout. TTD:7-46.

SHIFT SCHEDULES. Medical aspects of shift operation. Axel Ahlmark. *Textil och Konfektion 3,* 113 (Apr. 1946).

From the standpoint of occupational hygiene continuous operation of a textile mill on a 3-shift system is objectionable, but there appears to be no significant hygienic hazard in a well operated 2-shift system. TTD:7-46.

TEXTILE MILLS — XIII

Mill machinery — XIII 2

IMPROVED MACHINERY. Some improvements in textile industry. D. D. Joshi. *Indian Textile J. 56,* 647-9, 651 (Apr. 1946).

A brief survey discusses changes in cotton machinery of recent years. TTD:7-46.

MACHINERY MAINTENANCE. Preventive maintenance program at Dan River Mills. Frank L. Byrd, Dan River Mills. *Cotton 110,* No. 4, 53-6 (Apr. 1946).

In order to forestall periodically recurring breakdowns, a program of preventive maintenance for machinery is outlined. TTD:7-46.

ACTIVITY RECORDING INSTRUMENTS applied to textile machinery. C. S. Parsons, Hathaway Mfg. Co. *Cotton 110,* No. 4, 59-64; *Textile World 96,* No. 4, 127, 129, 131, 209-10, 212, 214, 216, 219 (Apr. 1946).

Utilization and efficiency of textile machinery is measured by activity-recording instruments. Data obtained are helpful in determining work qualifications and making assignments. Methods of application are suggested. TTD:7-46.

MILL MACHINERY. Ball and roller bearings—textile applications. J. H. Brooke. *Textile Mfr. 72,* 197-8 (Apr. 1946).

The wide range of applications of ball and roller bearings to textile operations is outlined. TTD:7-46.

NEW WINDING MACHINERY. Planning construction of your post-war mill. Jas. Osborne. *Textile Age 10,* No. 4, 78, 80, 82, 84 (Apr. 1946).

New warping, winding, and spooling operations are discussed. A high speed winder should be evaluated by taking into account time lost in making changes for different yarn counts. A high speed warper is considered essential. TTD:7-46.

PROTECTION OF MILL EQUIPMENT. Ernest W. Fair. *Knitter 10,* No. 4, 32, 35 (Apr. 1946).

Proper maintenance of mill equipment includes daily lubrication checkups. TTD:7-46.

Mill power — XIII 3

BOILERS. Automatic boiler control not confined to large plants. Advantages of spreading method for hand fired boilers. Anon. *Silk & Rayon 20,* 626-8 (May, 1946).

Methods of automatic control and hand firing are discussed. TTD:7-46.

FUEL ECONOMY in Indian cotton mills. Anon. *Indian Textile J. 56,* 600-6 (Apr. 1946).

A Government of India report outlines a program of fuel economy suggested by investigations of a number of Indian mills. TTD:7-46.

Mill Materials **XIII 4**

ELECTRIC DRIVING of textile factories. XI. Internal transport for textile processes. E. Howlett. *Textile Mfr. 72,* 193-5 (Apr. 1946).

The conveying of cotton bales, card and scutcher laps, weavers' beams, bales of cloth, etc., by means of electric runways and trucks, with a consequent saving of manual labor, is discussed. Electrical units for heating and the various drying operations in a mill are considered in some detail. TTD:7-46.

HANDLING ROVING SPOOLS. Woolen mill saves labor with unique conveyor. Anon. *Textile World 96,* No. 4, 120-1 (Apr. 1946).

A gravity conveyor for delivering full spools to the spinning room and an elevator with automatic discharge for bringing back empty spools to the card room are described and illustrated. TTD:7-46.

Mill lighting **XIII 5**

GOOD MILL LIGHTING. Jas. T. Meador. *Textile Bull. 69,* No. 11, 22, 24, 42; *70,* No. 1, 18, 20, No. 3, 22, 24, 36 (Feb. 1, Mar. 1, Apr. 1, 1946).

In estimating lighting requirements for a cotton yarn mill an illumination intensity of 17-25 ft. candles is considered desirable (except in the weaving room, where 25-50 ft. candles is required). Two diagrams illustrate a lighting layout. A dust-tight type of lighting fixture is suggested in the opening and picker rooms. Diagrams show lighting layouts for the winder, warper, and tying-in rooms with the use of individual 100-W, double-tube fixtures.

TTD:7-46.

Atmospheric control **XIII 6**

AIR CONDITIONING. S. Cheetham, H. Cheetham & Co., Ltd. *Textile Weekly 37,* 762, 764, 766 (Apr. 19, 1946).

A brief discussion of the different temperature and relative humidity requirements of the various textile operations, along with proper consideration for the comfort of the workers. TTD:7-46.

DUST. Elimination of card-room dust. F. Charnley, British Cotton Industry Research Ass'n. *Textile Weekly 37,* 808, 810, 812 (Apr. 26, 1946).

Card-room dust consists essentially of fine sand, particles of leaf and seed coat, fragments of molds, and portions of cotton fibers. Larger dust particles (10 microns and larger) are very much less numerous than the smaller particles (5 microns or less). It is the larger particles which present filtering devices successfully remove. It is thought that the small particles are the cause of byssinosis. Only 2 methods completely eliminate dust: (1) by hooding cards so that dusty air is drawn off and rejected and (2) by the electrostatic precipitation method of filtration.

TTD:7-46.

HUMIDIFYING EQUIPMENT. Function and maintenance of humidifying equipment. Fernand Moreau, Jr. Oakite Products, Inc. *Textile Bull. 70,* No. 3, 16, 18 (Apr. 1, 1946).

Evaporation of water is the essential function of the many types of humidifying equipment; there are 2 general types, direct and indirect. Four general maintenance problems present themselves in equipment handling large amounts of water: hard water scale, slime odors resulting from bacteria growth, airborne dust, and corrosion. Oakite composition No. 52 is said to be an effective germicidal and fungistatic ingredient that combats these problems. TTD:7-46.

VENTILATION IN FACTORIES. J. W. Cooling. *Textile J. Australia 21,* 104-5 (Apr. 1946).

Along with a brief discussion of air conditioning is given a table showing comfortable working conditions (in temperature and relative humidity) for various operations of the textile industry (i. e. carding, spinning, weaving, for cotton, rayon and wool) as well as for other industries. TTD:7-46.

Process control **XIII 7**

ELECTRONIC CONTROL FOR TENTERS. Application of electronic control to cloth guiders on tentering machines. Anon. *Textile Recorder 63,* No. 757, 36-7, 68 (Apr. 1946).

A feeler box, composed of a vertical finger having an elecrical contact that rides against the cloth edge, is the essential element in an automatic cloth guiding means for tentering machines (Airedale Electrical & Mfg. Co.). Its operation is described and illustrated by photographs and diagrams. TTD:7-46.

OVERHAUL PRODUCTION METHODS. Sakarlal Balabhai. *Indian Textile J. 56,* 669-71 (Apr. 1946).

A plea for modernized production techniques in Indian textile mills. TTD:7-46.

INSTRUMENTS AND PROCESS CONTROL. New York State Vocational and Practical Arts Ass'n. Delmar Publishers, Inc., Albany, N. Y.; 233 pp.; price $2.75.

Reviewed in *Chem. & Met. Eng. 53,* No. 7, 273 (July, 1946). TTD:7-46.

BASIC SCIENCES XIV

AUTOMATIC CONTROLLERS. Diaphragm control valves. Bruce Irwin, Hammel-Dahl Co. *Instruments 19,* 390-5 (July, 1946).

An automatic controller can only operate a valve in response to changes on its sensitive element. Proper control of a process must include selection of the proper valve as well as the proper controller. The type of flow desired through the valve determines the valve design to use. Differences in valve design and flow-through are discussed.
LCL TTD:7-46.

ELECTRONICS—The basis of improved industrial process measurements. Douglass M. Considine & Donald P. Eckman, Brown Instrument Co. *Rayon Textile Monthly 27,* 267-71 (May, 1946).

A description of various electronic measuring and controlling devices, many of which can be used in textile manufacturing and testing. Extensive bibliography.
HAM TTD:7-46.

FUNGI. Deleterious effects of fungi. Frank J. Sowa, Sowa Chem. Co. *Rayon Textile Monthly 27,* 257-9 (May, 1946).

Fungi and their effects on textiles are discussed and a list of some of the effective fungicides given.
HAM TTD:7-46.

SURFACE FILMS. Surface films of polymers. Part II. Films of the coherent and semicrystalline type. D. J. Crisp, Cambridge Univ. *J. Colloid Sci. 1,* 161-84 (Mar. 1946).

Monomolecular polymer films are slightly expanded and relatively unstable if strong intermolecular forces are present. Stable films exist at low surface pressures when polymers contain strongly hydrophilic groups. Side chains influence film properties, as illustrated by a series of polymethacrylate polymers: short chains result in strong intermolecular forces and coherent films; large side chains provide secondary cohesion. Polyamides form coherent films. High viscosity and intermolecular cohesion account for hysteresis and collapse phenomena. Films spread at the oil-water interface are similar to films at the air-water interface, but the differences between coherent and fluid films are less pronounced.
EKF TTD:7-46.

ELECTRICAL ENERGY IN AIR AFFECTS TEXTILES. Peter M. Strang. *Am. Wool Cotton Reptr. 60,* No. 15, 11-12, 37, 39, 41, No. 16, 11-12, 49 (Apr. 11, 18, 1946).

Republished from *Am. Wool Cotton Reptr.*, Sept. 18, 1941. TTD:7-46.

1947 INSTRUMENTS INDEX. *Instruments 19,* No. 7, Part 2 (July, 1946); 136 pp.
LCL TTD:7-46.

TEXTILE RESEARCH XV

TEXTILE INDUSTRY. China is serious about developing its textile industry. Herbert Leopold, McGraw-Hill World News. *Textile World 96,* No. 4, 133, 226, 229 (Apr. 1946).

China's plans for developing her textile industry are briefly discussed. TTD:7-46.

VARULEXIKON: BEKLADNADSVAROR OCH HEMTEXTILIER (GLOSSARY OF GOODS: GARMENT FABRICS AND DOMESTIC TEXTILES). Kooperativa Forbundet, Stockholm, 1945; 428 pp.; price Kr. 20.

Reviewed by Konrad Unell, *Textil och Konfektion 3,* 67-8 (Mar. 1946). TTD:7-46.

INDUSTRIAL RESEARCH for small industry. Roland P. Soule, Am. Machine & Foundry Co., Lawrence W. Bass, U. S. Industrial Chemicals, Inc., Harold L. Smith, Vermont Marble Co. *Chem. & Met. Eng. 53,* No. 7, 124-9 (July 1946).

In a symposium before the New England Research Conference of the New England Council the needs of small businesses for a research program are stressed. Such a program should be directed toward consumer demand and, for small businesses, should be of the applied type. The research director should balance his long term with short term projects; he should keep his research from trouble-shooting for sales service. A research worker should be chosen for imagination and willingness to change. Research is a gamble but no research is a bigger gamble.
LCL TTD:7-46.

INDUSTRY AND RESEARCH. E. Raymond Streat, A. Healey, J. R. Hosking, C. C. Paterson and A. J. Philpot. *Textile Mfr. 72,* 171-5 (Apr. 1946).

A symposium at a conference of the Federation of British Industries held in London. TTD:7-46.

MANUFACTURER AND DYER as partners in textile industry. H. W. Partridge. *Textile Mfr. 72,* 209-10 (Apr. 1946).

Close coöperation between the manufacturer and dyer is urged as essential to producing the highest quality goods. TTD:7-46.

RESEARCHES of Mellon Institute, 1945-1946. Anon. *Chem. Eng. News 24,* 906-15 (Apr. 10, 1946).

In a review of the 33rd annual report there is brief mention of a study of the stress-strain relationship of cotton fibers. TTD:7-46.

TASK FOR TEXTILES. Raymond Streat. *Fibres, Fabrics & Cordage 13,* 187-9; *Textile Colorist 68,* No. 5, 24, 55 (May, 1946).

A lecture in which some brief observations are made on the future of textiles. TTD:7-46.

TEXTILE EDUCATION. Anniversary of the Textile Institute in Boras. Stig Löfgren. *Textil och Konfektion 3,* 157-9 (May, 1946).

Illustrated description of the Boras Textile Institute, its curriculum and laboratory activities, and its relations to the Boras Vocational School, testing laboratory and textile museum. TTD:7-46.

TEXTILE EDUCATION. Old China sends us young textile students. Earl Mauldin. *Textile World 95,* No. 4, 101-2 (Apr. 1946).

All phases of textile manufacturing and management in the U. S. are being studied by technically trained Chinese students as an important part of the effort to develop the potential market in China. TTD:7-46.

TEXTILE RESEARCH. Swedish Textile Research Institute dedicated. Anon. *Textil och Konfektion 3,* 150-6 (May, 1946).

Illustrated description of the Swedish Textile Research Institute at the Chalmers Technical University in Goteborg. Some relations of research to textile

manufactures and to the problems of the garment industry are discussed. TTD:7-46.

TEXTILE RESEARCH. The new Institute for applied textile research in Norrköping. Birger Eriksson. *Textil och Konfektion 3,* 54-8 (Mar. 1946).

The new textile research institute at Norrköping, which is to be an affiliate of the Lenning Textiltekniska Institut, will undertake a comprehensive program of research on the structure, colloid chemistry and physical properties of fibers as related to their applications in textiles. A floor plan of the new Institute is shown. TTD:7-46.

BEKLEIDUNGS-INDUSTRIE SCHWEIZ (GARMENT INDUSTRY OF SWITZERLAND). Buchdruckerei Winterthur A. G., Winterthur, Switzerland; 1945; 570 pp.

Reviewed in *Textil och Konfektion 3,* 221 (June, 1946). TTD:7-46.